DOCUMENT RESUME

ED 123 668 CS 501 375

AUTHOR Davis, William L.; O'Connor, J. Regis
TITLE Serial Transmission of Information: A Study of the Grapevine.
PUB DATE 76
NOTE 19p.; Paper presented at the Annual Meeting of the Southern Speech Communication Association (San Antonio, Texas, April 1976)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Communication (Thought Transfer); Diffusion; *Information Dissemination; Information Theory; *Oral Communication; Organizational Communication
IDENTIFIERS *Grapevines

ABSTRACT

In order to test the conclusions of previous studies of the informal communication system commonly known as the "grapevine," a study was conducted of the flow of one unit of information over the organizational grapevine. One of the experimenters planted a unit of information with two secretaries in the departmental office of Speech and Theatre at Western Kentucky University. Three days later questionnaires were given to all members of the organization (fifteen full-time faculty, eight graduate students, and five secretaries) to determine the flow of the grapevine. Results substantiate most of the previous research findings and show that as an effective and rapid means of communication, the grapevine tends to follow a cluster pattern of communication, that persons communicate primarily with other persons within a functional group, and that information is transformed as it reaches its final destination. (Figures illustrating the text are included.) (JM)

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# Serial Transmission of Information: A Study of the Grapevine

Rhetorical and Communication Theory Debut Panel
Southern Speech Communication Association
San Antonio, Texas April, 1976

by

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CS 501 375

Serial Transmission of Information:
A Study of the Grapevine

William L. Davis and J. Regis O'Connor

Communication within any organization can be called its life-line. When poor communications exist within the organization, the "life" of the organization as it is structured is in certain jeopardy. A healthy organization, however, usually maintains effective communication channels, both with the public and its employees.

The types of communication found within an organization are determined by the relationships of the people involved. Formal relationships (i.e., organization chart) denote formal communication channels, while social relationships give rise to informal communication. The formal communication channels are inadequate to carry all the needed information in an organization, therefore the informal channels play an important role in the life of the organization. The importance of informal communication was indicated by Keith Davis:[1]

> It is a powerful influence upon productivity and job satisfaction. Both formal and informal systems are necessary for group activity, just as two blades are essential to make a pair of scissors workable.

This study will examine the informal system of communication, commonly known as the "grapevine." The conclusions of prior research highlight five areas of interest: (1) the effectiveness and speed of transmission of the grapevine, (2) the cluster pattern found in the grapevine, (3) the different kinds of communicators apparent

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[1]Keith Davis, Human Relations at Work: The Dynamics of Organizational Behavior (New York: McGraw-Hill Book Company, 1967), 212.

in the grapevine, (4) the flow of information within and between functional work groups, and (5) other factors affecting the flow of information.

## Previous Studies

There has been relatively little literature dealing with tne grapevine. Several studies have found this informal channel more effective than the formal ones. Walton listed the responses to a question put to 100 employees of the Naval Ordnance Test Station at China Lake, California.[2] The grapevine clearly was perceived as the most rapid means of transmission.

> Suppose management made an important change in the way the station would be run--through what channel or means of communication would you most likely get the word first?
>
> Grapevine - 38%
> Supervis[illegible] - 27%
> Official memo - 17%
> Station newspaper - 7%
> Station directive system - 4%
> Bulletin boards - 4%
> Other - 3%

The grapevine has two factors that aid in its preference over other means of communicating. First, it is largely word-of-mouth or face-to-face communication. Because of this, it moves much faster than printed media.[3] Secondly, it is free of organization restrictions.

> . . . there is an inverse relationship between the speed with which a medium disseminated information and the organizational restrictions or restraints placed upon it. In other words, the faster the medium, the fewer the restraints--the more restraints, the slower the medium.[4]

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[2]Eugene Walton, "Communicating Down the Line: How They Really Get the Word," Personnel, 36 (1959), 79.

[3]Davis, p. 226

[4]Walton, p. 79

It merely takes a slip of the tongue to get the grapevine rolling--no official memo to type; no printing press to ink; no public statement to be written and approved.

Once the grapevine is moving, the information travels rapidly. Davis reported in his examination of the Jason company that "a certain manager had an addition to his family at the local hospital at 11 o'clock at night, and by 2:00 p.m. the next day 46% of the whole management group knew about the event.[5] Walton concluded in his study "that the grapevine was easily the fastest means of spreading messages among exmployees is not, of course, surprising."[6] Goldhaber in a non-empirical study found that "a message was generated in one country on Monday afternoon and spread to over twenty people (from several cities) while attending a meeting in another country (2,500 miles away)--all within 36 hours."[7] Finally, Davis facetiously commented upon the efficiency and elusive nature of the grapevine when he wrote in Dun's:

> With the rapidity of a burning powder train and as elusive as a zephyr, it filters through steel walls and glass partitions, from subbasement to the rafters, past the water fountain, the copying room, the manager's door and the porter's mop closet. It cares nothing about civil rights; it has no respect for persons or for the prerogatives of management; it will carve up and serve the big boss, the shope foreman or the pool typist with fine impartiality.[8]

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[5]Keith Davis, "Management Communication and the Grapevine," Harvard Business Review, 31 (1953), 45.

[6]Walton, 79.

[7]Gerald M. Goldhaber, Organizational Communication (Dubuque, Iowa: Wm. C. Brown Company Publishers, 1974), 123.

[8]Keith Davis, "The Care and Cultivation of the Corporate Grapevine," Dun's Review (1973), 44.

When information travels over an organizational grapevine, it is moving serially. However, another dimension has been added by Davis and documented by later writings.[9] Davis postulated that information transmitted by the grapevine does not travel in a chain-like sequence, but rather in a "cluster" pattern:

> A tells three or four others (such as B, R, and F), . . . Only one or two of these receivers will then pass on the information, and they will usually tell more than one person. Then as the information becomes older and the proposition of those knowing it gets larger, it gradually dies out because those who receive it do not repeat it. This network is a "cluster chain" because each link in the chain tends to inform a cluster of other people instead of only one person.[10]

Figure 1 illustrates the cluster pattern.

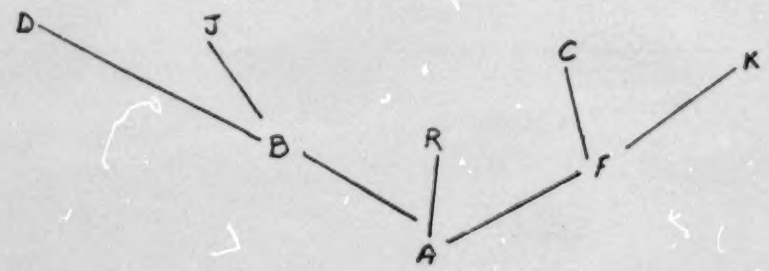


Figure 1. Cluster chain

Generally, three titles are given to the participants in grapevine communication--liaisons, isolates, and dead-enders. There is some problem in distinguishing the use of the three terms in the literature. Jacobsen and Seashore presented us with a title for the people who transmit the information freely, and actively con-

[9]Harold Sutton and Lyman Porter, "A Study of the Grapevine in a Governmental Organization, "Personnel Psychology, 21 (1968), 223.

[10]Davis, Human Relations at Work, 224.

tribute to the life of the grapevine when they dubbed them "liaisons."[11] Davis and Sutton and Porter further defined the term when they limited liaisons to those persons who pass information to more than one individual.[12] However, Davis confused the situation by using the term "key communicator" interchangeably with "liaison."[13]

The Caplow study (1946) indicated that "few" soldiers acted as liaisons in the transmission of rumors during World War II.[14] Davis also found that only a few persons who heard information over the grapevine actually transmitted it. In different examples, he concluded:

> For example, when a quality-control problem occurred, 68% of the executives received the information, but only 20% transmitted it. Again, when an executive planned to resign to enter the insurance business, 81% of the executives knew about it, but only 11% passed the news on to others. Those liaison individuals who told the news to more than one other person amounted to less than 10% of the 67 executives in each.[15]

Sutton and Porter resubstantiated both when they found over a seven month period, that those people who passed on the information more than one-third of the time, comprised 10% of the group.[16]

The Sutton and Porter study also distinguished between isolates

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[11]Eugene Jacobsen and Stanley Seashore, Communication Practices in Complex Organizations," Journal of Social Issues, 7 (1951), 37.

[12]Davis, Harvard Business Review, 46; Sutton and Porter, Personnel Psychology, 226.

[13]Keith Davis, "The Organization That's Not on the Chart," Supervisory Management 2, (1961).

[14]Theodore Caplow, "Rumors in War," Social Forces, 25 (1946-47), 299.

[15]Davis, Harvard Business Review, 46.

[16]Sutton and Porter, Personnel Psychology, 226.

and dead-enders. It found that those persons who passed on the information less than one-third of the time (dead-enders) made up 57% of the total group, and those people who did not hear the information half of the time, comprised 33% of the 79 employees studied.[17] Davis combined the two titles and outlined the reasons three foremen level groups were isolated.

> (a) The foremen in one group were generally left out of communication chains. These men were of a different nationality from that of the rest of the employees, performed dirty work, and worked in a separate building. Also, their work fitted into the manufacturing process in such a way that it was seldom necessary for executives to visit their work location.
>
> (b) Another group often was in a communication chain but on the tail end of it. They were in a separate building some distance from the main manufacturing area, their function was not in the main manufacturing procedure, and they usually received information late . . .
>
> (c) A third group both received and transmitted information, but transmitted only within a narrow radius. . .[18]

Because of the confusion over terms, it is difficult to determine the correlations in the two studies. It is apparent, however, that few individuals transmit information to more than one person and that many persons either never hear the information transmitted over the grapevine or do not transmit it further.

Flow of Information

Organizations are divided along scalar and functional lines, depending upon the theory one accepts. Functional divisions are created by the tasks that each member of an organization performs. For example, the supervisors are all on the same functional level

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[17] Ibid.

[18] Davis, Harvard Business Review, 48.

in an organization because they all perform essentially the same task. Caplow concluded in 1946 that rumor information rarely travels from one functional group to another: "Only a few members of each group habitually communicated the rumors originating in their own group to members of the other and these few habitual contacts . . . were the only bridges by which most rumors passed from one group to another."[19] Caplow indicated that most of the rumor transmission occurred within the same company unit.

Davis' findings were somewhat different, and he concluded:

> A second significant effect of functionalization in the Jason Company was that the predominant flow of information for events of general interest was between the four large areas of production, sales, finance and office, and industrial relations, rather than within them. That is, if a production executive had a bit of news of general interest, he is more likely to tell a sales, finance or personnel executive than another production executive.[20]

Davis attributes this desire to tell someone outside one's own functional group to a feeling that the listener would consider the liaison to be "in the know." Other factors such as the relatively small size of the company (67 in the management group that was studied) and the small community in which it was located (10,000 inhabitants), could certainly have played a large role in the communication of ideas outside the functional group.[21]

A third study, by Sutton and Porter, tends to support the Caplow study and contradict the Davis results. Sutton and Porter concluded

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[19]Caplow, Social Forces, 299.

[20]Davis, Harvard Business Review, 47.

[21]Ibid, 44.

"Contrary to Davis' findings, the predominant flow of information took place within rather than between functional groupings."[22] Davis seems to contradict his own findings when he states in a later writing, "Employees having adjacent desks are likely to communicate more than two employees in separate buildings."[23] Functional groups tend to locate within the same general area of an organization, especially among lower status jobs.

Serial Alterations

Because of the serial nature of communication, much content is changed as a message reaches its receiver. Pace and Boren stated, "Messages in serial reproduction, like water in a great river, change through losses, gains, absorptions, and combinations along the route from the headwaters to their final destination."[24] These changes are defined by the same two authors:

> (a) details become omitted, declining sharply in number at the beginning of the series and continuing throughout thereafter--but at a somewhat slower rate (sometimes called leveling); (b) details, when retained, become highlighted, allowing them to gain in importance and meaningfulness (sometimes called sharpening); . . . (c) details become modified to conform to the predispositions of the interpreter (sometimes called assimilation) . . .[25]

The processes of leveling, sharpening and assimilation have become accepted as the very fibre of which serial transmission is composed.

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[22]Sutton and Porter, Personnel Psychology, 229.

[23]Davis, Human Relations at Work, 226.

[24]R. Wayne Pace and Robert Boren, The Human Transaction (Glenview, Ill.: Scott, Foresman and Co., 1973) in Goldhaber, Organizational Communication, 105.

[25]Ibid, 107.

The grapevine is more a product of the occasion and situation than it is of the person. This explains why the grapevine is more active at some times than at others, and also why one might be classified as a liaison in one grapevine transmission and as an isolate or dead-ender in another. Sutton and Porter (1968) indicated that liaisons change with the kind of information on the grapevine. Davis listed several factors that determine whether one transmits the information or lets it "die."

> Liaison individuals tend to act in a predictable way. If an individual's unit of information concerns a job function in which he is interested, he is likely to tell others. If his information is about a person with whom he is associated socially, he also is likely to tell others. Furthermore, the sooner he knows of an event after it happened, the more likely he is to tell others. If he gets the information late, he does not want to advertise his late receipt of it by telling it to others.[26]

Therefore the kind of information and its recency (i.e., news or history) are two determinants of the effective flow of that information on the organizational grapevine.

## Grapevine Study

To test the conclusions of the previous studies, the authors attempted to study the flow of one unit of information over the organizational grapevine.

### Organization Studied

The organization upon which the research was based is the Department of Speech & Theatre of Western Kentucky University.

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[26]Davis, Harvard Business Review, 37.

A rapidly growing department, it employs fifteen full-time faculty members, eight graduate assistants, and five secretaries, all of whom are included in the sample.[27] In addition, the information flow was traced to students and members of the university community outside the department, including faculty spouses.

Methodology

The method used in the study was developed in 1953 by Keith Davis. It is termed "ecco analysis" and its use requires the researchers to "follow particular units of information from the beginning of their journeys to the end."[28] The following unit of information was "planted" by one of the experimenters at 8:00 a.m., November 12, 1974, with two secretaries in the departmental office:

> "My wife, Patty, found out yesterday that she is three months pregnant. She was told by Karl Dobson, a local doctor who practices with Nick Kafoglis. She is expecting in May, right around graduation time and we hope that the child doesn't affect her being able to attend graduation ceremonies. We have already chosen the names. If the child is a boy, it will be called William Bradford Davis, named after my grandfather. If it is a girl, it will be named Rachel Elizabeth Davis, named after nobody, possibly Queen Elizabeth. I personally hope it's a boy, but Patty has no preference. Patty is going to Nashville tomorrow to look at baby beds."

Figure 2 - Unit of Information Used in the Study

Three days later (Friday, November 15) a questionnaire was given to all members of the organization to determine the flow of the grapevine.

[27]There are actually 18 full-time faculty. However, the experimenters excluded themselves and one other member on leave, from the study.

[28]Keith Davis, "A Method of Studying Communication Patterns in Organizations," Personnel Psychology, 6 (1953a), 303-304.

As was indicated in all previous studies, transmission of information over the grapevine is very rapid. Within three days forty-four persons had heard the information. It had permeated the confines of the organization and moved into other areas of the university and of the surrounding community.

Within twenty-four hours, almost half (47.07%) of the final group had heard the information. The speed of transmission takes on greater significance when one considers that by 4:00 p.m., Wednesday (thirty-two hours after the initiation), virtually all the organization members had received the information. Most of the flow after Wednesday was outside the Speech and Theatre Department.

Table 1

SPEED OF TRANSMISSION

| Day and Time | Number that Know | Percentage of Total |
|---|---|---|
| Tuesday, November 12 | | |
| 10:00 a.m. | 5 | 14.70% |
| 12:00 noon | 9 | 26.47% |
| 4:00 p.m. | 14 | 41.17% |
| Wednesday, November 13 | | |
| 8:00 a.m. | 16 | 47.07% |
| 10:00 a.m. | 19 | 55.88% |
| 12:00 noon | 20 | 58.82% |
| 4:00 p.m. | 24 | 70.58% |
| Thursday, November 14 | | |
| 8:00 a.m. | 26 | 76.47% |
| 12:00 noon | 27 | 79.41% |
| 4:00 p.m. | 34* | 100.00% |

*Several persons could not recall when they heard the information.

The grapevine slowed at times and then revived itself. It finally slowed to a stop on Thursday and was halted by the experimenters on Friday morning. The results of this study certainly reinforce the thesis that grapevine information travels in a cluster pattern. This is apparent in Figure 3.

Accepting the Jacobsen and Seashore definition of liaisons as those people who transmit the information in a grapevine, one finds 18 of the 43 persons who heard or 41.99%, were liaisons.[29] If one limits a liaison to only that individual who transmits information to more than one person, we get significantly fewer liaisons--10 of 43, or 23.25%. (See Figure 3). These results seem to confirm the previous findings that a very small percentage of the total group actually is responsible for the life of the grapevine.

Using the Sutton and Porter definition as a guide, the experimenters found those people who did not hear the information, or isolates, comprised 44.82%, or 13 of the 29 persons within the Department of Speech and Theatre. Those persons who heard the information, but did not transmit it (dead-enders) made up 58.10% of the total group (25 of 43) and 40% of the organizational group--6 of the 15 Speech and Theatre faculty members. If one accepts Davis' definitions and combines the two groups, the study reveals that 13 of the 28 departmental members (67.85%) either did not hear the information or did not pass it on. These results seem to confirm past findings.

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[29]See Figure 3.

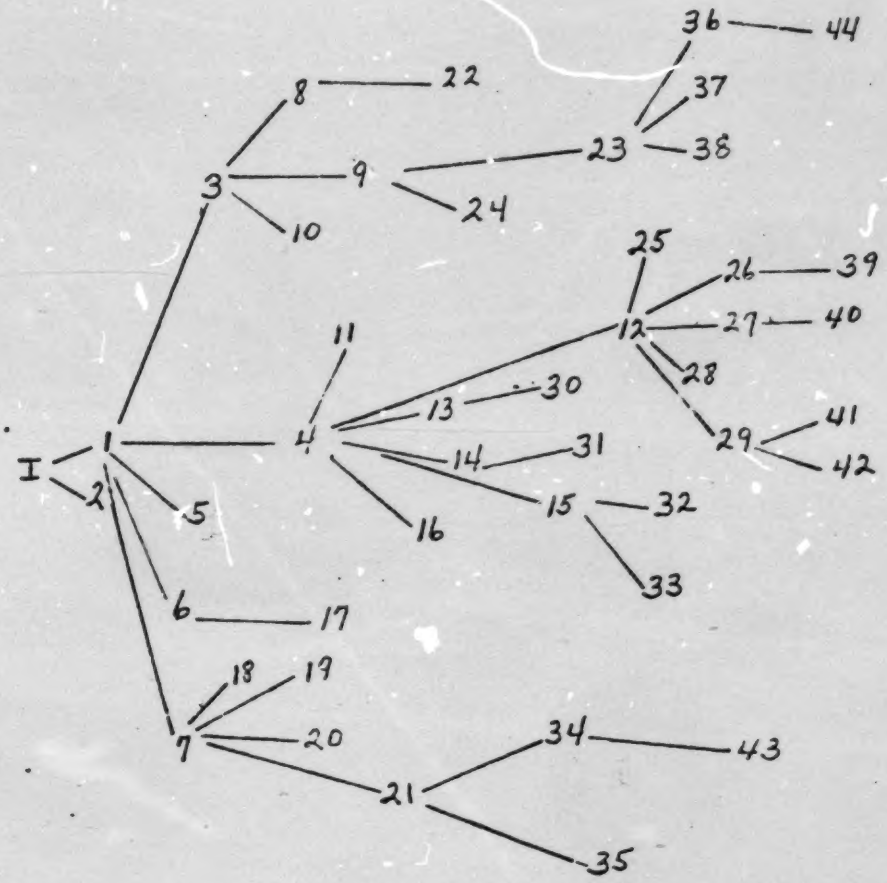


Figure 3. Cluster Pattern in Study

I. Information Initiator

1. Secretary
2. Secretary
3. Faculty member
4. Graduate Student
5. Student
6. Student
7. Faculty member
8. Faculty member
9. Faculty member
10. Faculty Wife
11. Faculty member
12. Student
13. Graduate student
14. Student
15. Graduate student
16. Graduate Student
17. Student
18. Faculty member
19. Faculty member
20. Faculty member
21. Faculty Wife
22. Faculty Wife
23. Secretary
24. Faculty Wife
25. Student
26. Student
27. Student
28. Student
29. Student
30. Graduate Student Wife
31. Student
32. Graduate Student
33. Graduate Student
34. Public School Teacher
35. Faculty Child
36. Secretary
37. Secretary
38. Secretary's Husband
39. Student Wife
40. Student
41. Student's Parent
42. Student
43. Minister
44. Secretary's Husband

It should be noted that not only does the study confirm the different kinds of communicators present in a grapevine, but also the reasons they happen to be included in a particular category. Davis' study concluded that location and/or occupational duties preclude certain people from hearing the grapevine information. This study seemed to corroborate Davis' findings. Of the 13 persons who did not hear the information, 7 are theatre personnel--perhaps not too significant in itself--but of the 8 full-time faculty members who failed to hear the information, 6 teach in the theatre area. This would indicate that, because of occupational expertise, the theatre personnel were excluded from the grapevine. There may be some explanation for this result. First, the information transmitted was about a speech faculty member--of little interest to anyone in theatre. Secondly, the two areas of the department tend to socialize separately, that is speech faculty socialize with other speech faculty, theatre faculty with theatre faculty. The social gap is rarely bridged and information apparently does not cross it. Finally, the isolation might be explained by office location. Many of the theatre faculty have offices outside the main work area of the organization. More importantly, the two speech faculty members who were isolates, have offices well out of the mainstream--one several floors away, the other in an area described as the "boondocks."

Much of the results relating to functional divisions within the organization have been discussed above. The results seem to indicate that not only did speech personnel communicate only within their division, but that faculty told other faculty and students told other students. Of the four faculty members who transmitted the information,

two told other faculty members and their own wives, one told only his wife, and the fourth told his wife and his secretary. There were 21 students involved in the study. With only two exceptions--one student told a faculty member, another told a parent--the students who transmitted the information told other students or their own spouses. These results contradict Davis' findings and support both the Caplow, and the Sutton and Porter studies.

The processes of leveling, sharpening and assimilation occurred in the study. Figure 2 shows the information as it was presented at 8:00 a.m., Tuesday, November 12.

Leveling.--At the time the flow of information was halted, very little of the original story was intact. Items that had been dropped completely were: the doctors' names, the child's possible names and their origins, the parent's preferences, and the wife's trip to Nashville.

Sharpening.--Very few facts in the story were sharpened or retained. Items that were sharpened include: the date Patty was informed she was pregnant, the date of expectancy, and the fact that both expectant parents hoped the arrival would not interfere with graduation ceremonies.

Assimilation.--Some interesting items of information were added to the original narrative to conform to the views of the communicators. There were: the husband seem excited, the husband seemed upset (two opposite feelings), and the couple did not want people to know about the pregnancy. Most of these additions can be explained by examining the husband's prior statements against having children.

## Conclusions

In the areas discussed, the study conducted by the authors would seem to substantiate most of the previous research findings. The grapevine is an effective and rapid means of communication. It tends to follow a cluster, rather than a chain pattern of communication. Most people when hearing information do not transmit that information to more than one person. Persons within a particular functional group communicate primarily with other persons in that same group. Finally, information is transformed as it reaches its final destination as certain facts are either dropped, emphasized, or assimilated.

This study utilized a relatively small organization and a single unit of information whereby to judge the operation of the grapevine. That operation has emerged as consistent with previous research utilizing larger organizations in non-educational settings. University faculty appear to be no more immune to the pervasive operation of this informal mode of communication than do business and industrial personnel.

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